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CHRISTINE MILNE, a woman of the first class, and a woman of the first class. N° 56 B.

# The Tech.

VOL. III.

BOSTON, JAN. 2, 1884.

No. 6.

## THE TECH.

Published on alternate Wednesdays, during the school year, by the students of the Massachusetts Institute of Technology.

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Subscription, \$2.00 per year in advance. Single copies, 15 cents each.

ALFRED MUDGE & SON, PRINTERS, 24 FRANKLIN STREET, BOSTON.

THE tension which almost every student of the Institute has been under during the present term, and which will naturally grow greater as the semi-annuals draw near, leads to the hope that with the new year will come a resolution on the part of the Faculty to do something to relieve the pressure. In many of the courses it is the almost universal complaint that it is impossible to do justice to all the work required, and that consequently something must be slighted each day. The third year seems to be the portion of the regular course most in need of some change which may bring relief, and we have no doubt that were the matter properly presented to the Faculty they would be very willing to give it at least their careful consideration. The main trouble seems to be that in many instances much more work is expected than the supplement to the catalogue, strictly followed, would allow. This results partly from the natural tendency of each instructor to magnify unconsciously the importance of his own department, and partly from the large amount of extra work, without which in certain courses one cannot hope to make even a respectable showing.

IN the architects' solution of the six-column problem one thing was very noticeable. Without an exception they were in the so-called classic style. It was not specified in the programme that this should be the style used; but from the dozen or so designers not one had chosen Gothic or Byzantine or any columnar styles but the Roman orders. Yet, notwithstanding this fact, it is likely that very few of these young men, if called upon to design some practical thing in the life that comes after the student's, would resort to this style. There is evidently a very strong tendency toward classicism in the department. Whether this be a good tendency or not it is well enough to consider. It is no doubt after the manner of the École des Beaux Arts; but there are in these days those who cry out loudly and bitterly against the narrow system which seeks to wrench into sympathy with a wretchedly copied, almost characterless style, young men whose natural tastes are for freer, nobler, and, withal, more useful styles.

THE chemists and miners are beginning to find that the change of time is anything but a blessing in their department, for in reality it cuts them off from fifteen minutes' work in the chemical laboratory every day, which in the aggregate counts for a good deal, especially when the large amount of time lost by the late opening of the laboratory is taken into consideration.

The laboratory nominally "opens" now at fifteen minutes past two, instead of at half past two as formerly, and closes at a quarter of five instead of the old hour of five o'clock.

The working time thus appears the same, but in view of the fact that a large majority of the men put into their laboratory work every spare moment from the time they enter the Institute

till the closing hour of the laboratory it will be seen that the students are obliged to do the same or even more work — in consequence of the late opening of the laboratory — in fifteen minutes less time than was the case before the adoption of the new standard.

It is fortunate that the miners and chemists were so well up in their work at the end of last year, for we are assured that no allowance will be made for time lost at the beginning of this year, in view of which and the present short working hours, however, we are by no means sure that they will be ahead of last year's classes by June of '84.

We would call the attention of the department professor to these points and ask his consideration of them, hoping, now that the gas fixtures have been put in, to see the closing hour of the laboratory changed to the old hour of five P. M.

ANY ordinary reader of the newspapers of the day cannot fail to be struck with the growing importance of the question of suffrage, as exercised by the multitudes of foreigners in our United States, and it will not be long before the question of its limitation will have to be seriously discussed.

The framers of our Constitution never intended the United States to become an asylum for the "ne'er do weels" and paupers of the European nations, but as an open field in which brains and honest labor should have the fairest rewards, as a country where all men should be free and equal, a government for the people, by the people, and as an inevitable result thousands are flocking to our shores from the older countries.

The vote is the great power put into the hands of these masses of humanity which have come, perhaps, from the vigorous government of Germany, or from more republican England, or from Italy, ignorant of our system, ignorant of nearly everything save that this is a free country, and what each will interpret as freedom may perhaps be traced in the records of our police courts and the daily list of crimes.

It is a very common remark that any grammar-school boy is better fitted to be allowed a vote than the great proportion of this foreign influx, and we think it is no exaggeration, for numbers of these men can neither read nor write. They fall into the hands of organized corruption and their votes are handled with a skill only exceeded by the disgust which every honest man feels toward the power thus ignorantly wielded.

It may be urged that we should educate them and make them fit for this privilege. Well and good, but until they are so educated they should not be allowed to vote, — an ignorant majority dominating over an intelligent minority.

New York City is said to be the third largest German city in the world, Vienna and Berlin only exceeding it. New York has 350,000 Germans. The foreign population of Boston is surprisingly large and consists mainly of Italians and Irish. In 1792 Boston had only 100 Catholics, while at the present day there are more than 100,000, and we may assume that the greater proportion of these is composed of Irish or Irish Americans.

The composition of the late city government indicates the way in which the control is leaving the hands of native Americans, 40 odd out of 60 being Hibernians of the councilmen and aldermen.

This is the test of our Constitution, which is as yet an experiment, not fully demonstrated, and the way it meets the issue will be keenly observed by foreign powers, whose rule will either be strengthened or receive its death-blow, in accordance as the Constitution rises superior to the event (as every patriotic American believes) or is incompetent to deal with it.

MR. CHARLES WOOD, '86, has been forced by the pressure of his school work to resign his position as director and treasurer of THE TECH. His class has elected Mr. W. H. Chadbourn as his successor. Mr. W. R. Ingalls, '86, and Mr. E. A. Haskell, '87, have been elected editors and begin their duties with this number of the paper.

## A Wise Provision.

A BLOOMING dude of æsthetic grain  
Was walking down Broadway,  
Taking a lunch from the head of his cane  
And digesting the matinée;

When a little girl who was passing near  
Espied his lank profile;  
And silently looked on his dress so queer,  
As he munched his frugal meal.

She gazed awhile on his six-feet-three,  
Then said in accents sweet:  
"O mamma, how thankful he ought to be  
They turned up so much for feet."

I. W. L.

## Visit to the Great Extinct Crater of Haleakala, H. I.

THE next great point of interest on the Hawaiian Islands to the Fiery Lakes of Kilanea is the large extinct crater of Haleakala. It is situated on Mani, the second island in size. Mani consists of two parts which are very mountainous, joined by a broad isthmus of low flat country. The western portion of the island was probably one large mountain formerly, but it has been seamed and furrowed by atmospheric agencies, and by earthquakes, until at present it presents a series of ridges and peaks, cut and separated by numerous gulches and valleys. Some of these are very beautiful, especially the famous Iao Valley, which though not so grand as the Yosemite, surpasses it in beauty.

The eastern portion of Mani consists alone of the one grand mountain of Haleakala, which rises to a height of 10,030 feet. On the summit is the crater which bears the same name, and which is the largest crater in the world. It is somewhat elliptical in shape, and has a general circumference of about twenty-seven miles, while its depth is from 2,000 to 2,500 feet. So large is this immense crater that were the cities of New York or Boston placed inside it, there would still be room for more.

Haleakala means the house of the sun, and it is said by the natives to have received its name in the following manner:—

Long ago Mani, the god of the island, was appealed to by the native women, who asked him

to cause the sun to go slower, so as to make the day longer, as with the common length of the day there was not sufficient time for their *kapa* (native cloth) to dry. Mani carried their petition to the sun, but that majestic luminary utterly refused to change his course. Mani, finding expostulations vain, determined to gain his desire in some other manner. Accordingly one night he hid himself on the highest peak of the island, with a long but very strong lasso in his hands. As soon as the sun appeared above the eastern horizon the next morning, Mani skillfully threw his lasso around him, and held him fast. The sun, finding himself caught, finally consented that if Mani would release him he would stay his course a little each year at this season, but in order to keep his whole course even he would take off just the same amount from the common length of the days at the opposite season of the year. This he has always done since, and thus it is that we have longer days in summer and shorter in winter.

When I visited Haleakala my party consisted of one companion beside myself and my dog, Toko. We landed at Maalaea Bay at four o'clock in the morning, and rode seven miles across the isthmus in express wagons to Wailuku, a very flourishing little village. There we rested a portion of the day, and then procuring horses, rode to Spreckelsville, from which point we were to begin our journey up the mountain on another day. This is one of the newer sugar plantations, and is very large. The laborers on it are Chinese, Portuguese, Norwegians, and others. Each of these nationalities keeps separate from the others, having its own little settlement of rough board huts or tents.

At nine o'clock on a clear bright morning we rode out of Spreckelsville on good, fresh horses. The summit of the mountain, twenty miles distant, was perfectly clear, with exception of one light fleecy cloud away to the right. Our road had a gentle ascent, and at first passed through a very fine country, with an occasional sugar plantation near by. At noon we unsaddled and rested for an hour, allowing our horses to eat the luxuriant grass.

At nearly three o'clock we reached Olinda, where is the last house. Here we stopped for a short time to get water for ourselves and horses, as we could find none beyond. We were now at a height of 4,000 feet, and still had to ascend 6,000 feet, in a distance of six miles. Above Olinda the grass rapidly disappeared, and the road became a mere trail. When one mile from the summit we passed a cave in which many people pass the night, going to the summit in the morning. From this point our horses suffered considerably from the rarefaction of the atmosphere, and panted laboriously as we proceeded.

A few minutes before sunset we arrived at the edge of the crater, and gazed, not without awe, into its depths. The shadows cast by the rays of the setting sun produced a very weird effect. We watched them till the sun disappeared below the horizon, and then turned to unsaddle and camp, but so suddenly does the darkness come after sunset, that we were obliged to work by the light of a fire.

We arose early the next morning to watch the sun rise out of the sea of clouds in which there were only a few small islands visible, the highest peaks of West Mani, Mauna Loa, and Mauna Kea on Hawaii, and the peak on which we stood. It seemed as though we had suddenly been transported to the Arctic regions and were looking over its frozen seas. The upper surface of the clouds was wreathed and curled in fantastic outlines like snow-drifts, and as the rays of the rising sun gradually lighted up there we beheld a scene of beauty that is seldom surpassed. It was with a sigh that we finally turned from this fairy scene to inspect the crater behind us.

Every feature of the crater was now in the light. As we gazed down upon its floor we could see several crater cones here and there, which looked like ant-hills upon its surface, so far were they below us, yet we knew that some of them were nearly a thousand feet high. From one of these we could trace a stream of lava which still appears fresh, although it is a few centuries since it burst forth. We spent some time in exploring the rim of the crater and

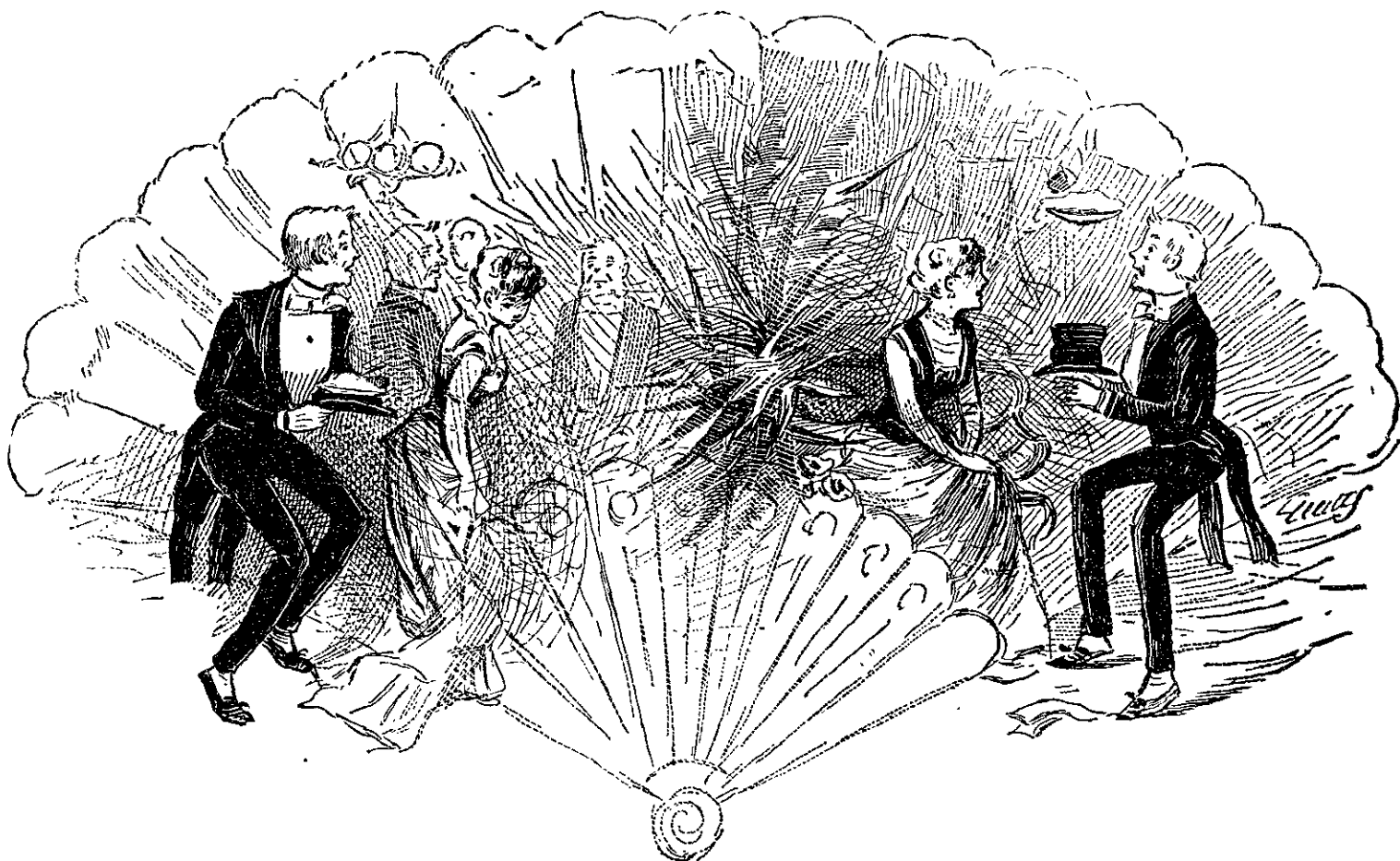
descending a few hundred feet down its almost vertical walls. We were fortunate enough to get by much exertion a few fine specimens of the *silver-sword*, a plant which is peculiar to the highest peaks of these islands and is now rapidly becoming extinct.

A fine view was obtained from the summit of the mountain when the sun had dispersed the clouds. To the northwest we could see the mountains of West Mani, seamed and furrowed by their numerous gulches, and beyond the islands of Lanai, Molokai, and Oahu. To the southeast we could plainly see nearly all the northern coast line of Hawaii and the triple peaks of that island beyond. The ocular illusion so often met with on high peaks was here very perfect. It seemed as though we were at the bottom of a deep circular bowl of which the horizon was the rim.

Toward noon we began our descent. When about four thousand feet below the summit we entered a belt of cloud which was so dense that we could see but a little distance in any direction, and we soon lost our way. This was a *pilikia*\* much to be dreaded. Riding in one direction we soon came to a gulch too deep to be crossed; turning in the opposite direction we soon met with a similar gulch there. Finally coming to a rail fence I dismounted and followed this, crossing several gulches by the way, till I found the point where we had passed it the day before. Then I accidentally found the only place where horses could cross the deep gulch for several miles. As we rode through its bottom we passed along the edge of a precipice where a single misstep would have precipitated us at least fifty feet. Having once found the road we were soon out of the cloud and at Olinda. We were completely drenched from the mist and walking through the bushes, but we soon became dry when in the sunshine. We were troubled with ringing in the ears and a severe headache nearly all the way down the mountain, but when we rode into Spreckelsville, just at night, these had entirely disappeared.

G. H. B.

\* Native word meaning trouble or misfortune of almost any sort.



*Illustrating the disadvantages of the crush hat when used as a salver, especially if the springs are loose.*

### The Old Year and the New.

NEW-YEAR'S EVE. A long, unlighted hall, with a window at the farther end admitting a few stray moonbeams. Under a door here and there a crack of light from the rooms opening upon the hall. A vague feeling that over there in the darkness is a staircase, with a clock upon the landing, slowly, lazily ticking the year away. It is rather cold out here away from the family party. But presently the clock strikes midnight and the old year is no more. The new year bursts into life with a loud peal of song from the merry-makers. Then the doors open, the long, dreary hall is flooded with light and sound, and up over the creaking stairs troop the jubilant young folks to bed.

Last of all come two young and beautiful girls, with arm linked in arm. They are fast friends, and as they reach the landing where the tall clock stands they lean upon the balustrade and listen to the tickling, — the lazy ticking of a century ago. They see not the figure of the young son of the house who stands above them

in the upper entry leaning over the balustrade to listen to their talk.

"Do you know," says one dreamily, "there is an odd story connected with this old clock. It used to stand in the great hall of an old castle on the Rhine; and it is said that in those times, just when about to strike the first hour of the new year, the clock would stop, as if unwilling so soon to forget its old friend, and begin the record of a new age. There is something touching in the thought that the clock, become through so many days attached to its master, goes on in its duty to a new master till, in the very moment when it would record the first spent hour, it is overcome with grief and weariness and dies away into silence. Hear how thoughtful and sad the ticking is even now. How blank the silence must be when it has stopped, as if eternity had come to an end!"

"One must feel at such a moment," returned the other, as if depressed by thought, "that there will be an inevitable end to all this living, which seems so endless, — a definite goal to which we are drawing nearer with every stroke of the pendulum. Do you remember

that picture in Cowper's poems where a horse has rushed, with his rider, to the brink of a precipice, when, frightened at the fearful depth below, he halts, and his master is thrown over his head into the unfathomable gulf? I have often wished I might, outside a dream, experience that man's sensation; I always feel so when at a great height, as if something were impelling me forward to jump. One must have some of those feelings, intellectually, when a clock stops, as you said this one used to do."

"Perhaps it is foolish," replied her companion, "but I have an irresistible inclination to try the experiment; and, being a complete believer in the constancy and honesty of clocks, as well as in not unreasonably strange supernatural occurrences, I propose that we wait here till one o'clock, and see what will happen." With these words she led the other to the lounge that stood against the opposite wall of the hall.

Sitting side by side, with hands clasped, they had no inclination to talk. Each was deeply engaged in her own thoughts. At first there was a slight rustle in the upper hall, as of some one swiftly passing along it away from the stair head; then all was silent, — silent till the silence grew oppressive and the ears throbbed in the intervals of the ticking of the clock. Those old, slow-beating horologes are fit reminders of our ancestor's leisureliness; few men of this day could hurry, or think of keeping business engagements by them. In reality time goes much more slowly according to those outlived relics than by our little modern clocks.

Nearer and nearer came the moment when the new year's first instalment of eternity would be given over to the past. Neither of the two watchers had any means to tell how the time passed, but each grew conscious that the moment was upon them and clasped tighter their companion's hand. And listen! Hark! was that the death-rattle of the expiring hour, — hoarse, indistinct? Hush! Can you distinguish the ticking now? No! the clock has stopped! It could not so easily leave in oblivion its year's companion and take up without a sigh a

task under the giddy young boy that had been born that night.

The hands of the girls are pressed closer to each other as the silence grows intolerable, and each strives to speak, when — ah! what is that? The door of the clock is opening; see, how that bent and withered man comes forth, his white hair is loose around his shoulders and his grizzly beard sweeps over his breast, barely distinguishable in the darkness! The weary form totters down the steps and wanders aimlessly, blindly, pitifully toward the moonlit window. Some great grief must have descended upon that aged head; he is bowed almost to the ground. He buries his face in his hands and a sound of weeping strikes upon the ears of the petrified observers. Ah! what a deadly sadness is that old man's lot. He raises his eyes to the glorious moon who sheds her light through the window upon him. Then he shrinks back into the shadow and dissolves into darkness.

For a second all is still, and the young girls draw closer to each other; but as yet their awe detains them in their seats.

And now a sound breaks upon their ears. It is that cheering sound, the morning cock-crow. They are sure that day will come at last, though long delayed. The lonely sound dies away, but before it is answered by another there stands in the moonlight the figure of a youth, — lusty, strong, healthful. A rippling, softly musical laugh falls from the lips, and with a noble stride he advances up the room. The figure pauses before the watchers, bows, and quickly passing up the steps to the landing, vanishes within the clock's ample walls. A moment more and the clock takes up again its weary task of marking the seconds of a century.

"Was it not strange?" said one girl to the other, when silence was again broken by the ticking and they had recovered from any little uneasiness they might have experienced.

"Yes," returned the other, "but very well done."

"I must acknowledge I don't see how he got into the clock with it going and all of us around

here. I saw him go up-stairs myself before we left the parlor."

"He must be shut up in there now. Have you a key? Let us lock him in and teach him better manners than to be disturbing the meditations of young women at this time of night." So saying she opened the door of the clock with a consistency that might have been expected from one of her age and sex. But all was quiet there, except the long pendulum's vibrations. Even the key was in its place on the nail half-way up the side.

To this day those girls will not forgive him for not telling them how he got in the clock and out of it.

#### The Rogers Memorial.

THE treasurer of the Rogers Memorial Committee, Mr. Rotch, is glad to state that the debt on the above is cancelled. Since the beginning of the term the following subscription have been received: From '82, \$15; '84, \$35.45; '85, \$9.50; '86, \$34.25. This, with the sums previously reported, makes the amount contributed by '82, \$51; '83, \$41; '84, \$108.45; '85, \$128.50; '86, \$74.25; giving a total of \$403.20. Of this \$3.20 have been expended for printing, etc., and \$400 have been paid to Mr. Bartlett, the sculptor, for the tablet and its setting.

WE regret to chronicle the death of Mr. James S. Atkinson, '81, which took place recently at Colorado Springs, Col. After taking his degree in the course of Mechanical Engineering at the Institute, Mr. Atkinson remained another year to continue his studies. He then went South as superintendent of the Cotton Improvement Company, but was obliged to leave on account of ill health. The cause of Mr. Atkinson's death, at the early age of twenty-three, was consumption.

MR. ROBBINS, the popular assistant of past years in the chemical laboratory, visited our new laboratory within the fortnight, and seemed much pleased with our new quarters.

#### Department Notes.

The corrected report of the New York and New England Railroad to the railroad commissioners has figures regarding the casualties on that road during the past year, which reduce somewhat those given in our last issue, and are as follows: Persons killed (passengers, 0; employes, 28; others, 21), 49. Persons injured (passengers, 27; employes, 98; others, 22), 147.

The total number of persons killed on the Old Colony should have been 23, and the number injured 20, during the same period.

A locomotive on the Central Railroad of New Jersey was recently indicated, while running at three hundred and ninety-three revolutions per minute, or at the rate of a mile in forty-five seconds. Mr. S. W. Brown, who, we believe, indicated the engine, states that it was difficult to breathe at the above speed without covering the mouth with the hand. This is probably the highest speed at which a locomotive has been indicated, and the card is of curious shape, having a great deal of compression. The *Mechanical Engineer* is devoting considerable space to the subject of the indicator.

The "extended smoke arch" has come into extensive use during the past two years, though it certainly does not add to the appearance of our locomotives. A diagonal baffle-plate is placed in an extension of the smoke-box, and intercepts the direct passage of the cinders to the chimney. A wire netting is placed in the smoke-box and arrests any sparks that have passed under the baffle-plate and have not lodged in the front of the smoke-box extension, which gradually fills with cinders, while the engine is running. It is emptied by a pipe which conducts steam to a hopper at the bottom and blows the ashes out. There is a hand-hole in the upper part of the smoke-box for cleaning the wire netting, etc.

The new Cantilever bridge, which crosses the Niagara rapids below the Falls, was opened last week. This is the first large bridge on the Cantilever system yet built, and the construction has occupied only a few months.

### Noticeable Articles.

NINETEENTH CENTURY, December. "Recreation," by Sir James Paget, a very eminent London physician. "Rachel" (the great French actress), by Mrs. Arthur Kennard.

CONTEMPORARY, December. "The Prospects of Republicanism in France," by Emile de Laostaye. "Evolutionary Ethics and Christianity," by Prof. Goldwin Smith. "In what hands are we,—in those of a Father, in those of a Power indifferent to the welfare of Humanity, or in those of a blind Fate? is a question which, let the devotees of physical science in the intoxicating rush of physical discovery say or imagine what they will, must surely have the most practical and abiding, as well as the highest interest for man. The ship of life is not, nor is it ever likely to be made so comfortable that the passengers will be content to float along in it without asking for what port they are bound."

ATLANTIC, January. "The Political Field," by E. V. Smalley. "The State elections of last fall disclosed results which surprised the politicians of both parties, and developed new conditions and probabilities for the approaching Presidential contest of 1884"

HARPERS', January. "Whittier," illustrated, and with an excellent portrait.

THE CENTURY, January. "In Wordsworth's Country," by John Burroughs. Illustrated.

W. P. A.

Secondary Batteries and the Electrical Storage of Energy, by Prof. Oliver Lodge. Journal of the Society of Arts, beginning Nov. 2, 1883. Reprinted in the Electrician (London), beginning Nov. 17, 1883.

Electro-Chemistry, by G. Gore, Electrician, beginning Nov. 17, 1883.

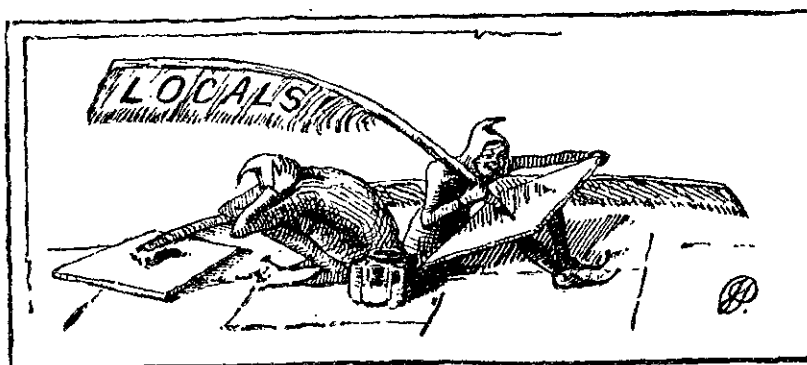
Electro-Motors and their Government, by Profs. W. E. Ayrton, and J. Perry. Journal of the Society of Telegraph Engineers, No. 49, 1883.

Also, "Transmission of Energy," by Prof. Osborne Reynolds, Journal of Society of Arts, beginning Oct. 5, 1883.

C. R. C.

The Emery scales and testing machines are described and illustrated in the *Iron Age* of Nov. 29.

The sewerage of Nahant is described at length in a paper by Mr. E. W. Bowditch, in the *American Contract Journal*. The town was greatly disturbed in 1881 by the appearance of typhoid fever, and the present thorough and complete system of sewerage was at once begun. Mr. Bowditch's report also appears in the fourth annual report of the Massachusetts State Board of Health, Lunacy, and Charity.



The new catalogues will be published in a few days.

The architects visited the Norway Iron Works last week.

Four new Becker balances have been added to the quantitative laboratory.

A Freshman recently asked at the supply room for a bead to put on a platinum wire.

The second-year mechanicals and electricals have begun wood-turning and pattern-making.

The semi-annuals are upon us; they are to begin Jan. 8 and last until the 20th, after which we have a recess until the last of the month.

The members of the battalion have appeared in their new uniforms, and present a very neat appearance; the brass buttons add greatly to the effect.

The battalion will soon give an exhibition drill and dance,—probably on Saturday, Jan. 12. It is to take the place of an examination in military drill.

The Sophomores have been supplied, by two or three members of their class, with letter paper bearing the monogram of the Institute in the Institute colors.

Contrary to the usual fate of petitions for extra holidays at the Institute, the Faculty granted the petition for the Monday before Christmas. It gave our tired students a little rest and a little additional time to prepare for the impending semi-annuals.

Prof. Cross expects to have the new physical lecture-room ready for use in the course of one or two weeks. This news will be appreciated by the Sophomores, who have been obliged to breathe the foul air of Room 3. After the change has been effected, Room 3 will be remodelled and used by Prof. Atkinson for his "historical laboratory."

The water-color exhibition in the architects' drawing-room was a great attraction week before last. Most of the visitors, however, did not come a second time.

Mr. Woodbury, '86, was recently elected a member of the Boston Art Club,—the youngest person ever elected to the club. He is well known in artistic circles as a rising young artist.

We learn that there is no probability of a restaurant, present or remote, at the new Y. M. C. A. building, the nearest approach being the willingness of the manager to let a portion of the lower floor to a suitable caterer if such a one should apply. We would, therefore, correct the impression given in the *TECH* recently, and, to the disappointment of many of our students say that we shall still be compelled to trudge down town for our mid-day meal.

The class of '85 held what the papers chose to call its holiday reception at Young's Hotel on the evening of Saturday, Dec. 29. There was a very large attendance of the members of the class, including a number who have left the Institute. The adoption of a new constitution and the transaction of the regular business, including the election of Mr. Sidney Williams as treasurer for the class, was followed by songs, music, and reminiscence until just before twelve, when the company broke up, after voting to hold similar meetings every six weeks. The date of the next one has been fixed for Feb. 9.

The afternoon dance in the gymnasium on Saturday Dec. 15, was one of the most successful ever given at the Institute. Over seventy-five tickets had been sold, so that the committee had the unusual sensation of perfect freedom from any anxiety regarding the financial side of the affair. The order was very well arranged and excellent music was furnished by Baldwin's orchestra. The committee consisted of T. W. Robinson, '84; C. R. Richards, '85; Charles Wood, '86; A. L. Cushing, '87; and the success which attended their efforts should cause such pleasant and informal gatherings to become a common feature of life at the Institute.

### The Glee Club Concert.

STUDENTS of the Institute and their friends to the number of two hundred and fifty turned out last Wednesday evening to listen to the concert by the Glee Club, which gave its initial performance in Berkeley Hall. The audience would doubtless have been much larger but for the unfavorable weather. The following programme of students' songs was finely rendered:—

#### PART I.

1. The Three Chafers.
2. The Midshipmite . . . . . *Adams.*  
Mr. BROWN, Semi-Chorus by First Basses.
3. *a* The Young Lover . . . . . *Koschat.*  
*b.* Fra Diavolo.
4. Guitar Solo . . . . . *Original.*  
Mr. STEELE.
5. Two Roses . . . . . *Werner.*
6. My Love at the Window.  
Solo by Mr. LATROBE. Yödel by Mr. KREPS.

#### PART II.

1. *a.* I've Lost my Doggy.  
*b.* Michael Roy.
2. Piano Solo.  
*a.* Serenade . . . . . *Merkel (Op. 74).*  
*b.* Saltarelle . . . . . *Ketterer (Op. 266).*  
Mr. UNDERHILL.
3. The Mermaid.
4. The Postilion . . . . . *Molloy.*  
Mr. HOMER.
5. Ching a Ling Ling.  
Solo by Mr. SPRAGUE.
6. Bagpipes.

The audience showed its appreciation of the concert by encoring almost every number. The chorus from *Fra Diavolo* and the guitar solo by Mr. Steele were received with loud applause, but the solo by Mr. La Trobe, with the yodeling of Mr. Kreps, brought down the house, which insisted on the repetition of the number. The solos of Mr. Homer and Mr. Sprague were also encored. Much of the success of the evening was due to the excellent management of Mr. Underhill, who acted in the capacity of pianist and conductor. The club is rather weak in first tenors and needs a little more practice, otherwise we think it will compare very favorably with the glee clubs of other colleges. The club is a worthy successor of last year's minstrels and should receive the hearty support of all students at its future concerts.

### Athletic Notes.

The first winter meeting of the Athletic Club was held in the gymnasium, Saturday afternoon, at two o'clock. Owing to the absence of many of the students from the city, the attendance was far below the average. Those, however, who were present, passed a very pleasant afternoon. '86 and '87 deserve great praise for their efforts to make the meeting a success, as, with the exception of the '85 class team, all the entries were from the two lower classes.

The first event was the standing high jump. F. H. Young, '86, and A. H. Twombly, '87, were the only contestants. Young won easily with a record of 4 feet 9 $\frac{3}{4}$  inches. Two teams from '86 then pulled to see which should enter in the class tugs. Winsor's team won by three inches. The teams were as follows: '86 A, P. Winsor, anchor, A. S. Garfield, A. G. Robbins, J. W. Smith. '86 B, C. C. Peirce, anchor, P. R. Fletcher, G. A. Ricker, T. F. Cutter.

J. F. Kilburn, '87, W. L. Dearborn, '87, H. F. Hill, '87, A. H. Twombly, '87, H. M. Steele, '86, entered for the fence vault. The vaulting was very good and presented an encouraging outlook for future meetings. Twombly won, with a record of 6 feet 9 $\frac{3}{4}$  inches, Dearborn second, 6 feet 6 $\frac{3}{4}$  inches. In the light-weight sparring, J. F. Kilburn, '87, and G. Kirkham, '87, appeared. Kilburn was awarded the medal, after a very exciting contest.

The first heat in class tugs of war was between '85 and '87. The drop was very even, and the two teams were very nearly matched, so that '85 only won by 1 $\frac{1}{2}$  inches. '85, E. Worthington, anchor, W. L. Mahon, Charles F. Spring, E. Morse. '87, A. H. Twombly, anchor, S. W. Bowles, Jr., J. E. Krips, F. F. Carpenter. For the putting the shot, F. H. Young, '86, P. R. Fletcher, '86, P. Winsor, '86, W. L. Dearborn, '87, and A. H. Twombly, '87, were entered. Young easily won by putting the shot 33 feet 2 $\frac{1}{2}$  inches, Fletcher second, 28 feet 11 inches.

In the middle-weight sparring C. C. Peirce, '86, and S. W. Bowles, Jr., contested. Peirce was given the prize, after two rounds. Peirce

was much the better man, and his clever dodging was worthy of all praise, but we are sorry that he was not content with simple boxing, but tried to disconcert his opponent by measures which, to say the least, were not such as would have been expected at the Institute games. In the final heat of the tugs of war, between '85 and '86, the drop was almost even, but Winsor, by two heaves, placed 6 inches to credit of '86, thus winning the event, with '85 second.

The officers of the day were — clerk of course, H. Furlong Baldwin, '84; referee, Frank H. Briggs, '81; judges, Walter H. Bunce, '84, Frank M. Haines, '84; judges of sparring, F. E. Sands, '85, J. M. Smith, '86; stewards, D. Baker, '85, E. Morss, '85, P. Winsor, '86, A. H. Twombly, '87. The music, which aided greatly in enlivening the waits, was furnished by Baldwin's Cadet Band. The next games occurring, probably, in about six weeks, will undoubtedly be better attended, and, we trust, will have several entries from '84 and '85.

### The College World.

HARVARD. — The question of allowing students to choose between Greek and the modern languages is approaching a decision. President Eliot, Prof. Agassiz, and of course Chas. Francis Adams, Jr., favor the reform. It is said that the Faculty are so much pleased with the elective system, that it will shortly be extended to the studies of the Freshman class, and perhaps even to the entrance examinations. — The receipts of the base-ball club of last season were about \$4,600. — Moot courts, which formerly flourished in the Law School, have been revived. — It is reported that the latest amusement at Harvard is cock-fighting. — Prof. Sophocles, the Greek professor, died a few days ago. — The Historical Society has undertaken the subject of the "Civil War" for the coming year, giving its attention chiefly to the ten most important battles of the late war. — Notwithstanding what Lord Coleridge said at Yale, a petition is being circulated to make Greek optional.

PRINCETON. — While Prof. McMaster was travelling last summer, the first one hundred and fifty pages of Vol. II. of his history were stolen. Having no other copy, and being unable to recover the lost manuscript, he was obliged to rewrite the entire amount, thus delaying the publication of the volume.

COLUMBIA. — The committee in charge of raising the \$4,000,000 asked for by the college have already secured \$1,000,000. — The trustees have arranged a four-years' course of study for women under direction of the college professors.

There are one hundred and ninety college papers published in the United States. The oldest of them is the *Brunonian*, which was founded in 1829. The circulation of some of the leading journals is as follows: *Dartmouth* 1,030, *Tuftsian* 1,000, *Yale Courant* 850, *Princetonian* 725, *Lampoon* 700, *Amherst Student* 625, *TECH* 600, *Athenæum* 600, *Harvard Advocate* 450.

"The 'Varsity" of Toronto advocates the discussion of political questions in the Literary Society, citing the fact that Gladstone, Beaconsfield, and many of the most distinguished statesmen of the age have repeatedly testified to the political insight and readiness obtained through the medium of such discussions at college.

Princeton is considering the question of compulsory gymnasium exercises for all classes. — *Ex.*

The English universities derive about one tenth of their income from a student source, while the American colleges gain two fifths of their incomes from the students. — *Ex.*

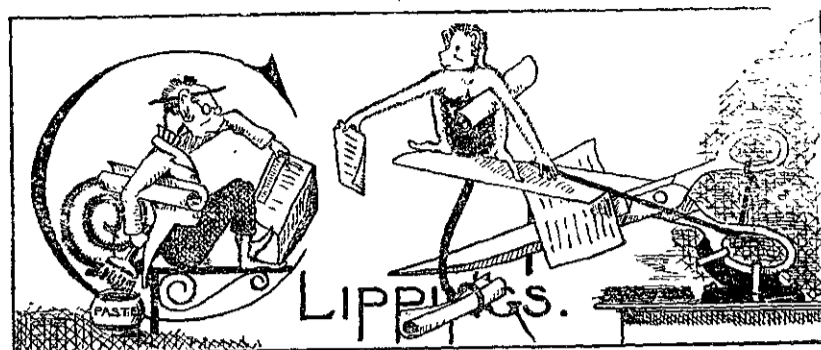
Matthew Arnold lectures once a year at the Cambridge University, England, and by so doing holds his professorship in the university.

We refer to the *Lampoon* of Dec. 7 for cut on foot-ball of the future.

Cornell University has established a department of finance and currency. — *Dartmouth.*

Prof. Sylvester, of Johns Hopkins, has been elected professor of mathematics at Oxford.

Columbia is reported to have the finest observatory in the country.



It is rather rough on the fair young autograph collector to write to an absent-minded poet for his autograph, and have him send her a nice little note in reply, all printed on a type-writer. — *Puck.*

OFFENSIVE MODESTY. New customer (to tailor), "I don't so much care what the things are made of, you know. All I want is to look like a gentleman." Tailor (with uncalled-for diffidence), "Well, sir, I can assure you that I will do my very best." — *Punch.*

The London Graphic punningly translates "*Chacun à son gout.*" Even with the gout a man may enjoy himself.

Sportsman (to boy who has brought basket), "Boy, you've been at this whiskey!" Boy, "Na! The cooark wadna come oot!" — *Punch.*

An old farmer has made the discovery that different sounds travel with varying degrees of velocity. He says the first stroke of the dinner bell can be heard by the workmen at the farthest corner of a quarter section farm, while the call to work has to be repeated several times at a distance of ten rods.

Bearing on our notice in the last number of the *TECH* of Mr. James Russell Lowell's recent election to the rectorship of St. Andrew's University are the following lines in *Punch*, in answer to a protest against his candidature, on the ground of his being an alien.

An alien? Go to! If fresh, genial wit  
In good sound Saxon speech be not genuine grit,  
If the wisdom and mirth he has put into verse for us,  
Don't make him a "native," why so much the worse for us.

Whig, Tory, and Rad. should club votes, did he need 'em,  
To honor the writer who gave "Bird 'o freedom"  
To all English readers. A few miles of sea  
Make Lowell an alien? Fiddle-dee-dee!

'T is cross party spirit, Bæotian, dense,  
That is alien indeed — to good taste and sound sense.



*Christmas as THE TECH anticipated it — in vain.*

Much of a young man's success in life depends on his selection of a father.

The dude's absorbing pastime is looking at his feet through the wrong end of an opera glass.

Since John L. Sullivan has opened his bar-room it is said that he gives the true Hub punch.

The congressional labor investigation revealed the fact that Jay Gould received his first lessons in watering stock while working on a farm.

The latest publications of Mr. O'Donovan Rossa are of such an incendiary character that the printer was obliged to employ a fire-proof reader. — A. D. L., in *Life*.

*Illustrating the need of international copyright; also proving conclusively that German is taught at H—rv—rd:*

*Prof.* What is fraud?

*Stud.* Taking wilful advantage of a person's ignorance.

*Prof.* Give an example.

*Stud.* Why — er — er, one of your examinations.

*Harvard Lampoon*, Dec. 21.

*Prof.* What is fraud?

*Stud.* Conditioning a man on one of your examinations.

*Prof.* How so?

*Stud.* Because it is using a person's ignorance to do him harm.

*Fliegende Blätter*, Nov. 11.

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It was a professor in the University of Michigan who said: "Gentlemen, I will not trouble to call the roll this morning, but those of you who are absent will please raise your hands." This reminds us of one of our own professors, who, in addressing a class in physics, remarked, "Now, gentlemen, you see this would be a perfect vacuum if it were perfectly free from air."

The Asbury University of Indiana has recently received an endowment of \$120,000, and the name has been changed to the DePaw University, from Mr. W. C. DePaw, of New Albany, Ind., whose property to the amount of \$2,000,000, is to be left the university at his death. — *Ex.*

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Besides the above distinctly professional courses, the Institute offers scientific courses of a less technical character, designed to give students a preparation for business callings. A four-years' course in biology, chemistry, and physics has been established, as preparatory to the professional study of medicine.

Modern languages are taught so far as is needed for the ready and accurate reading of scientific works and periodicals, and may be further pursued as a means of general training.

The constitutional and political history of England and the United States, political economy, and international law are taught, in a measure, to the students of all regular courses.

Applicants for admission to the Institute are examined in English grammar, geography, French, arithmetic, algebra, and geometry. A fuller statement of the requirements for admission will be found in the catalogue, which will be sent without charge on application.

A clear admission paper from any college of recognized character will be accepted as evidence of preparation, in place of an examination.

Graduates of colleges conferring degrees are presumed to have the necessary qualifications for entering the third-year class in any of the regular courses of the Institute, and will be so admitted provisionally, on the presentation of their diplomas.

The feature of instruction which has been most largely developed in the school is laboratory training, shop-work and field practice, to supplement, to illustrate, and to emphasize the instruction of the recitation and lecture room.

Surveying instruments are provided for field work in civil and topographical engineering. Extensive shops have been fitted up for the use of both hand and machine tools; and a laboratory of steam engineering has been established as a part of the instruction in mechanical engineering. Several steam boilers and steam engines of various types are available for experiments and tests. The department of mining engineering and metallurgy has the use of laboratories in which the milling and smelting of lead, copper, silver, and other ores, in economic quantities, are regularly performed by the students themselves. The classes in architecture supplement the work of the drawing and designing rooms by the examination of structures completed or in course of erection, and by practical experiment in the laboratory of applied mechanics, testing the strength of materials and working out problems in construction. The Kidder Chemical Laboratories, just completed, contain desks for four hundred and twenty-six students and afford the best modern facilities for the study of general, analytical, and organic chemistry. The Rogers Physical Laboratory has been greatly extended in every department during the past year, especially in respect to facilities for instruction and research in electrical science.

On the successful completion of any one of the four-year courses of the Institute, a degree of bachelor of science will be conferred. The Institute is also empowered to confer the degree of doctor of science. Special students are allowed to enter special divisions of any of the courses, on giving evidence that they are prepared to pursue with advantage the studies selected.

The Institute of Technology, as a recipient of a portion of the United States grant to colleges of agriculture and the mechanic arts, gives instruction in military tactics.

The fee for tuition of students taking the full course is \$200 a year. Besides this, \$25 or \$30 are needed for books and instruments. There are no separate laboratory fees. Only payment for articles broken is required.

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It is now said that the University of Michigan foot-ball team was defeated by Vassar — 16 to 0.

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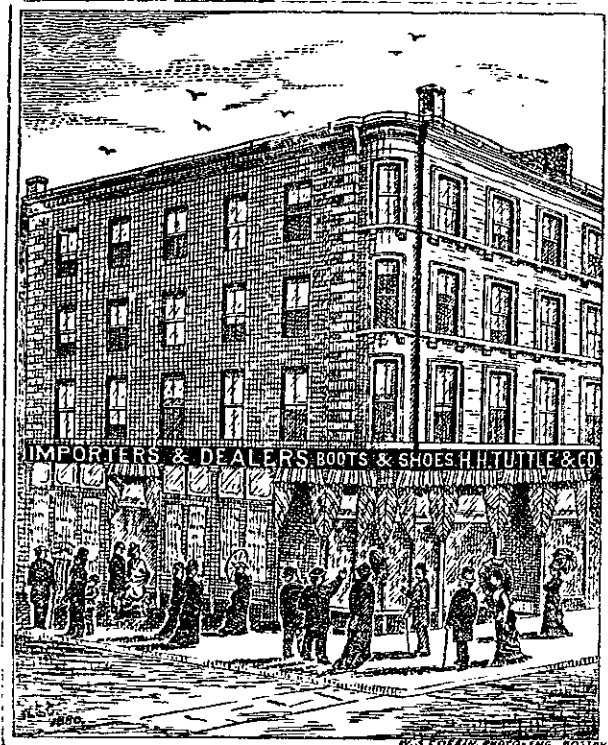
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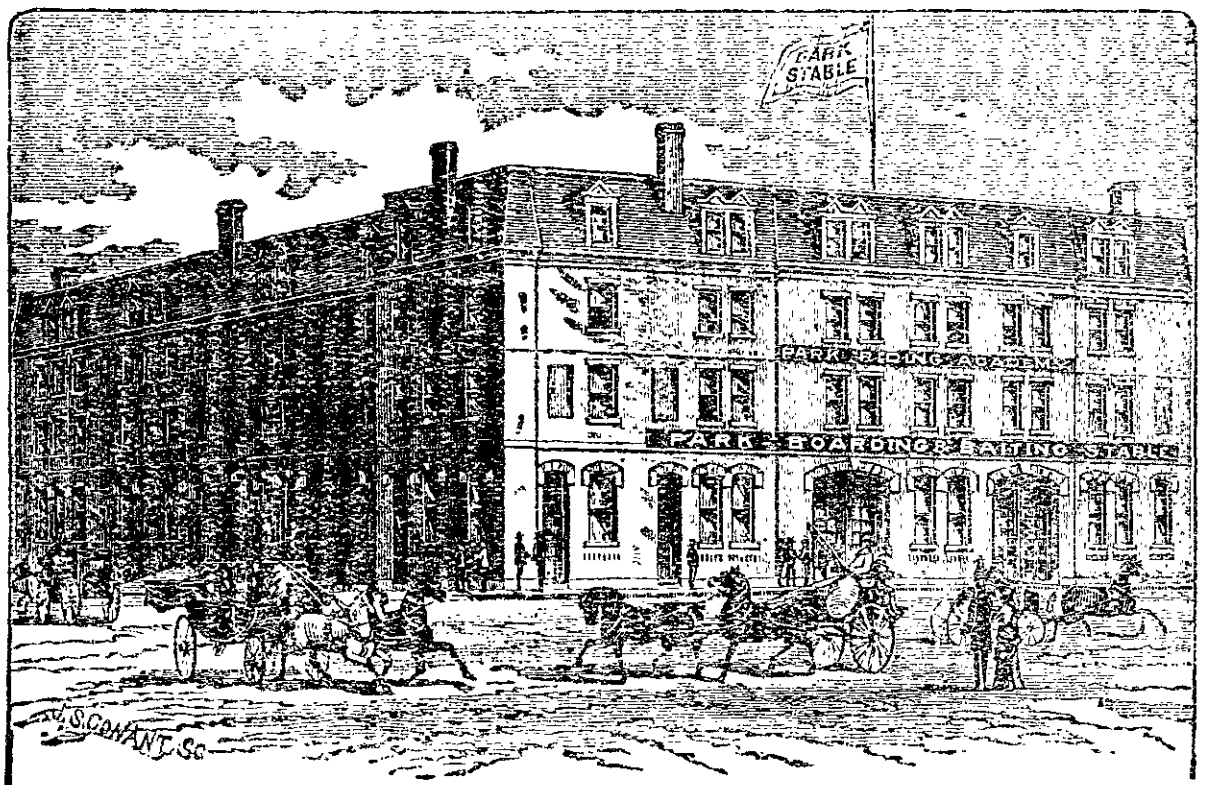
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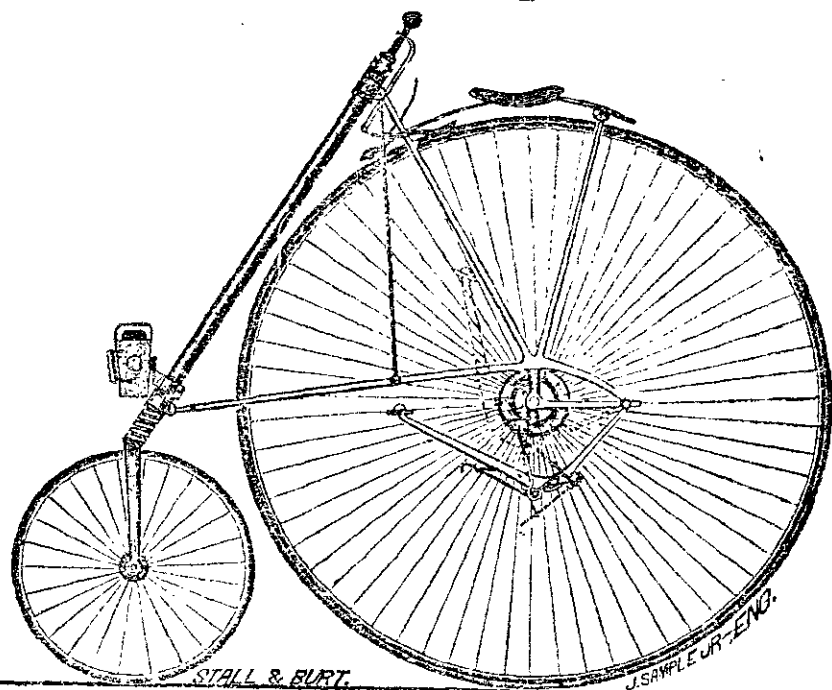
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